

## Clean Water

starts with you

The DNR tests waters throughout Iowa to make sure they are meeting state water quality standards. Those standards are in place to protect drinking water, aquatic life and recreational uses, like swimming. When a stream or lake doesn't meet those standards, the stream or lake is placed on the state's impaired waters list. The DNR then creates a plan which outlines ways Iowans can help improve the water quality in their community's lakes and streams.

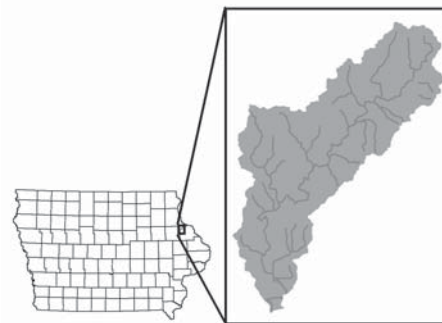
### DNR needs your input

Every Iowan needs the help of their fellow citizens and watershed groups to improve water quality in their community. If you or your group would like to meet with a DNR staff member to discuss water quality, please contact Chris Van Gorp at (515) 281-4791 or [Chris.VanGorp@dnr.state.ia.us](mailto:Chris.VanGorp@dnr.state.ia.us)



For more information on water quality improvement plans, please visit [www.iowadnr.com/water/watershed/](http://www.iowadnr.com/water/watershed/)

# North Fork Maquoketa River



**Pollutant:** *Sediment, nutrients, ammonia*

**Pollution Sources:** *Point and nonpoint sources*

The North Fork Maquoketa River needs your help. As you'll read below, the DNR is putting together a plan outlining the river's problems and possible solutions. But it's up to you to make sure those solutions are put into effect. A cleaner North Fork Maquoketa River depends on you.

## What's wrong with the North Fork?

Pollution keeps the river from meeting its state-designated standard of supporting aquatic life, like fish. That placed the river on the state's impaired waters list in 1998.

A research method called Stress-or Identification (SI) revealed that high levels of sediment and nutrients (especially phosphorus) made it difficult for aquatic life to thrive in the river. Toxic levels of ammonia have caused six large documented fish kills in the river and its tributaries since 1995.

The impaired segment of the North Fork Maquoketa River starts near the headwaters by Luxemburg, flows through New Vienna and ends 19.5 miles later in Dyersville.

It's necessary to improve water quality in the entire watershed to maintain clean water in the river along the impaired segment. A watershed is the area of land that drains into the river.

## What is causing the problem?

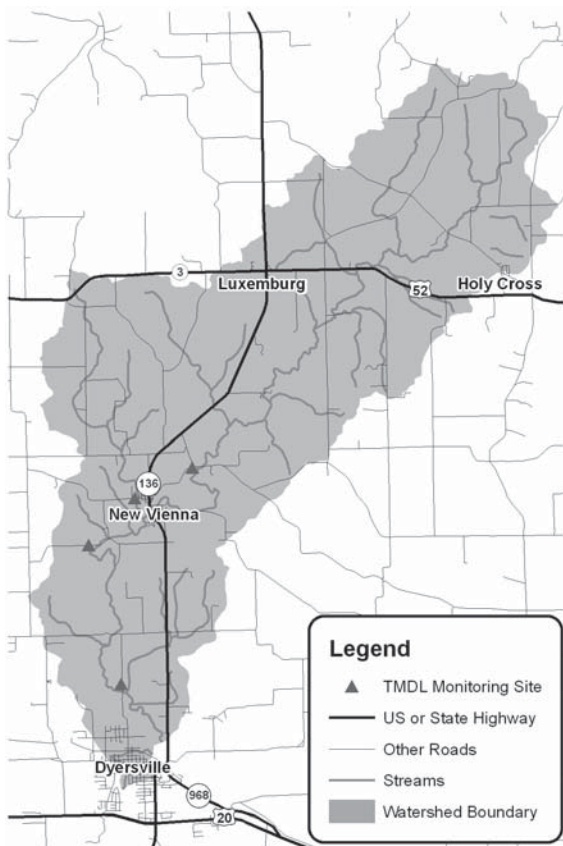
Most pollution in the watershed comes from nonpoint sources, or sources that are not easily traced back to a specific "point," like a wastewater treatment or industrial plant.

In the North Fork Maquoketa River watershed, nonpoint sources include soil erosion, habitat alterations, open feedlots, and areas used to land-apply manure and fertilizer. Rainwater and snowmelt can wash waste from livestock (confined and pastured), pets and wildlife into the river. Cattle with access to streams can leave manure in the river and trample the streambanks.

To reduce the amount of sediment and nutrients reaching the river, changes in waste and land management will be needed. It will take time to make these changes and to see the effects.

## What can be done to improve the river?

The ultimate goal is to improve water quality and remove the river from the state's impaired waters list. To do that, sources of sediment, nutrients and ammonia need to be cleaned up in the watershed. The river will no longer be considered "impaired" when it again fully supports aquatic life. For that to happen, certain pollutants must be kept out of the river.



Using research results and with the public's help, the DNR has developed a water quality improvement plan (also known as a TMDL, or total maximum daily load). A water quality improvement plan outlines goals for local communities on what it takes for cleaner water in their area and to reduce the amount of pollutants reaching the river.

To meet water quality improvement goals, there needs to be a 77 percent reduction in sediment reaching the river, a 73 percent reduction in nutrients and manure releases must be prevented.

While the DNR has done the background research and can provide technical and funding assistance, it is ultimately up to residents and businesses in the watershed to take action and clean up the river.

### Possible North Fork conservation practices:

To determine the best alternatives to improve conditions in the river and watershed, the current watershed assessment must be updated to contain all necessary information to formulate those alternatives. Some alternatives for reducing sediment and nutrients may include:

- ◆ Install structures to reduce both ag and urban runoff.
- ◆ Limit cattle access to streams and install alternative water sources for cattle.
- ◆ Improve manure containment and management for open feedlots.
- ◆ Use streambank protection and stabilization measures.
- ◆ Install riparian buffers along stream corridors.
- ◆ Use agricultural management practices that increase crop residue, such as no-till.
- ◆ Construct terraces, grassed waterways and grade stabilization structures.
- ◆ Better manage nutrients on agricultural ground.
- ◆ Incorporate or subsurface-apply manure and commercial fertilizer while controlling soil erosion.
- ◆ Establish fall-seeded cover crops.
- ◆ Use low or no-phosphorus fertilizers on lawns.
- ◆ Implement erosion and sediment controls at construction sites.

#### *To reduce ammonia:*

- ◆ Proper control of open feedlots will prevent contaminated runoff from reaching streams. Runoff carrying manure must be contained on the feedlot site. Runoff from areas upland of open feedlots should be diverted around the feedlot.

